

DOCUMENT RESUME

ED 308 174

SP 031 271

AUTHOR Hutchinson, Lynn M.
TITLE Interactive Styles in Traditional and Reflective Teacher Education Seminars.
PUB DATE Mar 89
NOTE 54p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, March 27-31, 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Discourse Analysis; Divergent Thinking; *Group Dynamics; Higher Education; *Interaction Process Analysis; Receptive Language; *Seminars; Student Attitudes; *Student Reaction; Teacher Behavior; *Teaching Styles

ABSTRACT

This study describes the interactive styles of two university professors and their students in traditional and reflective seminar contexts. As both professors taught the same group of undergraduates in an inquiry oriented experimental teacher education program and also taught groups of graduate students in traditional seminars, it was possible to analyze professor and student styles in both contexts. A discourse analysis system for seminar settings was used to determine how participants contributed to the structure and sequence of seminar talk in the four settings. Although structuring and sequencing styles varied between the two professors, professor style remained almost constant between settings, suggesting that the effect of context on professor style was minimal. Student styles were strongly influenced by professors; they varied their performance to match the professors' styles. No differences were found in the total number of moves (speech acts, comparable to sentences) contributed by students in different contexts. However, students enrolled in traditional seminars accommodated professor style to a greater extent than did students enrolled in reflective seminars, who contributed significantly more moves typically taken by the professor in traditional settings. These differences suggest that student participation in reflective and traditional seminars differed qualitatively rather than quantitatively. (Author/JD)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED308174

**Interactive Styles in Traditional and
Reflective Teacher Education Seminars**

**Paper Presented at the
Annual Meeting of the American Educational Research Association
March 27-31, 1989
San Francisco, CA**

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☐ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

L. M. Hutchinson

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

**Lynn M. Hutchinson
Kent State University
Kent, OH 44242**

BEST COPY AVAILABLE

16031271

Interactive Styles in Traditional and Reflective Teacher Education Seminars

Lynn M. Hutchinson
Kent State University

March, 1989
AERA, San Francisco

Abstract

The purpose of this study was to describe the interactive styles of two university professors and their students in traditional and reflective seminar contexts. As both professors taught the same group of Honors undergraduate students in an inquiry-oriented experimental teacher education program and also taught groups of graduate students in traditional seminars, it was possible to analyze professor and student styles in both contexts. A discourse analysis system for seminar settings was developed and used to determine how participants contributed to the structure and sequence of seminar talk in the four settings. General participation rules for professors and students in seminars emerged from this analysis. To determine the influence of different professor and student styles, these rules were tested among settings. Some parameters for reflective teacher education were suggested by differences in professor and student performance between contexts. Although structuring and sequencing styles varied between the two professors, professor style remained almost constant between settings, suggesting that the effect of context on professor style was minimal. Student styles were strongly influenced by professors; they varied their performance to match professors' styles. No differences were found in the total number of moves contributed by students in different contexts. However, students enrolled in traditional seminars accommodated professor style to a greater extent than did students enrolled in reflective seminars, who contributed significantly more moves typically taken by the professor in traditional settings. These differences suggest that student participation in reflective and traditional seminars differed qualitatively rather than quantitatively.

If one accepts that communication is the essence of teaching, then teaching must be conceptualized as a conversational process (Green & Wallat, 1981). Researchers who view teaching as a communicative process focus on the sociolinguistic variables related to individual's participation in the teaching-learning process (Green & Harker, 1982). As stated by Stubbs, "Teaching IS sociolinguistic behavior, and by studying it as such one can recover some of the educator's assumptions which underlie it" (1976, p. 103, italics in original).

In the mid-seventies, researchers began to look at classroom interactions using discourse analysis procedures that examined conversational sequences (Dore, 1974; Edmondson, 1981; Edwards & Furlong, 1978; Erickson, 1982; Green & Wallat, 1981; Sinclair & Coulthard, 1975; Stubbs, 1976). Studies of classroom conversations focused almost exclusively on the language and communication patterns found in formal, didactic classrooms. Discourse analysis systems also were developed for use in dyadic settings such as doctor-patient and social worker-client interviews, mother-child interactions, and casual talk between equal status participants (Burton, 1981). Conversations in less formal educational settings, where the establishment of communication patterns require negotiation between teacher and students (Young, Arnold & Watson, 1987), were not studied. Although much was known about the structure and sequence of traditional classroom and dyadic conversations, little was known about seminar conversations and no system was available for use in seminar settings. To develop a system for analyzing the verbal, nonverbal, and paralinguistic features of seminar interactions, it was necessary to examine conversational theory and the discourse analysis systems used in formal and informal settings.

Discourse analysis systems, used to examine conversations in different settings, fall within the general principles of linguistics and are distanced from less rigorous ethnographic approaches (Burton, 1980). Discourse is viewed "as a linguistic level

higher than grammar, but which nonetheless displays a hierarchical rank scale analogous to those in the more studied levels of grammar" (Burton, 1980, p. 118).

Discourse analysis is used to examine the purpose of what is said. Speech acts are analyzed to determine "what one does in saying thus and so" (McLaughlin, 1984, p. 277, *italics in original*).

The primary unit of discourse analysis is the speech act, the linguistic equivalent of the grammatical clause. Speech acts combine into moves, comparable to sentences, which are the highest units of grammar. There are no constraints on grammatical structure above the sentence level: "Paragraphs have no grammatical structure; they consist of a series of sentences in any type of order" (Sinclair & Coulthard, 1975, p. 20). This lack of constraint indicates that participants are free to sequence conversational exchanges in many ways. Exchanges between speakers combine into transactions and, at the highest level, entire conversations or lessons. How these sequences differ among settings describes participants' roles, rights, and responsibilities.

Structure and Sequence of Classroom Conversations

What teachers and students "do" in classrooms distinguishes their conversations from other types of talk. The participation roles of teachers and students are specified (Green & Harker, 1982) and "cannot be abstracted from the interactional activities which constitute them" (Stubbs, 1983, p. 29). The role of teacher has to be performed, acted out, and continually constructed during social interaction (Stubbs, 1976).

The primary responsibility for determining what goes on in the classroom belongs to the teacher (Gage, 1978). The teacher, central to the interaction (Edwards & Furlong, 1978), is the most active participant (Bellack, Kliebard, Hyman & Smith, 1966). The teacher structures the conversation (Green & Harker, 1982), determines the topic (Stubbs, 1983), allocates turns at speaking (Sinclair & Coulthard, 1975), asks questions which are answered by students (Bellack et al., 1966), and evaluates students (Mehan,

1985). Teachers' power and control are revealed through their sequences and structures (Bellack et al., 1966; Edwards & Furlong, 1978; Sinclair & Coulthard, 1975).

Teaching style may be described by analyzing "the rate, source, and dominant types of teaching cycles used" (Power, 1987, p. 423). Bellack and associates (1966) defined teaching cycles as ordered sequences of teacher and student moves. They discovered 21 different types of teaching cycles in their study of secondary classrooms. One interaction pattern, or teaching cycle, dominated classroom conversations. This pattern was described as: Teacher-Solicit, Pupil-Respond, Teacher-React (Bellack et al., 1966; Edwards & Furlong, 1978); Teacher-Initiate, Pupil-Reply, Teacher-Evaluate (Mehan, 1985); Teacher-Initiate, Pupil-Response, Teacher-Feedback (Sinclair & Coulthard, 1975). The pattern, hereafter referred to as the IRF sequence, allows the teacher to have almost complete control over choosing the topic and structuring the conversation (Coulthard, 1977; Edwards & Furlong, 1978; Stubbs, 1976). In classroom interactions the teacher has the right to talk first, last, and most; to control the content of what is said; and to control the transmission of what is said by allocating turns at speaking (Edwards & Furlong, 1978). Teachers not only tell students when they may talk, what they may talk about, and when they must stop talking, they also tell students how well they talked (Edwards & Furlong, 1978; Stubbs, 1976, 1983).

Classroom conversation is characterized by the transfer of information from teacher to students in chains of IRF sequences. Sinclair and Coulthard's (1975) discourse analysis system for use in classrooms was based on the prevalence of IRF sequences. It was designed to handle teacher initiations, student responses, and teacher feedback, but not peer interactions or student initiations, which the developers viewed as atypical classroom situations. In Sinclair and Coulthard's system, only the teacher may contribute to the structure of classroom conversations; student participation in sequences is restricted to answering moves. This framework illustrates differentiation of participation roles, rights, and responsibilities in classroom settings.

Structure and Sequence of Casual Conversations

Conversations, wherever they occur, are joint productions (Stubbs, 1983) which follow certain patterns (Sacks, Schegloff & Jefferson, 1974). Unlike teachers and students in classroom settings, speakers in casual settings have equal participation rights (Burton, 1981). Casual conversations are jointly produced and controlled by participants who negotiate the topic (Wardhaugh, 1985), allocate turns among themselves (Sacks et al., 1974), and ask questions to which they do not know the answers (Mehan, 1985). Evaluations, common in classroom settings, are viewed as atypical occurrences in casual talk and may indicate the use of sarcasm (Burton, 1980).

The topics discussed in casual conversations are not pre-determined by one person but rather emerge as a consensual outcome (Wardhaugh, 1985). Once a topic is established, speakers have much latitude in maintaining or shifting topic sequences (Litton-Hawes, 1977). There are, however, certain constraints on the introduction, stability and change of topics (Sigman, 1983). In all conversations, a speaker's success at developing a new topic of conversation depends on many complex variables, especially those related to status within the group (Weiner & Goodenough, 1977).

Question-answer sequences, a basic building block of all conversational types (Heritage, 1985), serve a different purpose in casual settings than in classroom settings. The questioner in a casual conversation, unlike the teacher, does not possess the answer and assumes it can be supplied by another speaker. When a speaker's question is answered, he or she typically acknowledges the response. However, the person questioned, unlike the student, may refuse to answer, ignore, or demand a reason for being asked the question (Burton, 1981).

Equal participation rights are reflected in the discourse analysis system developed for casual conversations. Burton found that the "pattern of neatly recurring three-part IRF exchanges" did not occur in casual talk (1981, p. 62). As the data she collected did not fit Sinclair and Coulthard's unidimensional, teacher-directed framework, she

devised a discourse analysis system to fit casual talk, one in which structuring and sequencing moves are open to all participants.

Structure and Sequence of Seminar Conversations

Interaction patterns in the seminar setting differ from the formality found in didactic classroom talk and the informality found in casual talk among equal status participants. Seminars are designed for purposeful discussions and the exchange of ideas, opinions, and information. When educators move away from didactic teaching strategies, a different system of analysis is required.

There is no IRF structure in a "genuine" discussion between professor and student; rather, the discussion format "implies quite different concepts of knowledge and a different concept of teacher and pupil roles" (Stubbs, 1976, p. 102). Ideal seminar relationships may be described in these terms: "The teacher is no longer merely one who teaches, but one who himself is taught in dialogue with the students, who in turn while being taught, also teach. They become jointly responsible for a process in which all grow" (Friere, 1968, p. 67).

No overt "rules" exist, but there are special conventions for the conversational features found in seminars. The professor, who has a privileged role position and authority (Edmondson, 1981) as "the first among equals" (Adler, 1984, p. 19), is responsible for directing discussions. However, facilitating a seminar discussion requires professors to relinquish "part of their authority and control over the instructional process" (Gall, 1987, p. 236).

Expectations for reflective seminars. The sharing of knowledge through discussion is a feature of reflective, inquiry-oriented education models. Cooperation, intellectual freedom, and equality form the framework for these models (Joyce & Weil, 1980). A basic purpose of inquiry is to educate active, autonomous learners who are skilled in decision-making, problem-solving, and critical thinking (Joyce & Weil, 1980).

Rather than one-directional interaction patterns, emanating from the professor to the student (Mehan, 1985), these patterns would become "reflexive," indicating that all participants were reflecting on the topic and discussion. Given this situation, one would expect students to initiate exchanges, to question the teacher's interpretation of their statements (Stubbs, 1976), to evaluate statements made by others, and to jointly structure conversations with their professor (Mehan, 1982). The ways in which seminar interaction patterns vary among settings result from professors' beliefs about the nature of teaching and learning and the relationships they develop with students.

Inquiry models encompass a wide variety of structures, ranging from low and open to high and controlled, as well as levels of cognitive complexity ranging from low to high (Joyce & Weil, 1980). Because the definition and parameters of reflective teacher education are unclear (Tom, 1985), a description of the interactive patterns found in traditional and reflective seminars is a first step toward clarifying a set of dimensions. In addition to describing the structure and sequence of seminar talk, these patterns reveal the participation rights and responsibilities of all members.

Method

Subjects

Two professors, PA and PB, who teach reflective seminars in an experimental Honors teacher education program were the subjects of this study. These professors were chosen to teach in this program because of their expertise in content areas and their inquiry-oriented styles of teaching. Both are full graduate faculty members who have taught in the College of Education at a large Midwestern university for ten years and have received publication and/or teaching awards.

Three groups of students (SA-1; SB-1; S-2) also served as subjects in this study. Students in Group SA-1 were graduate students enrolled in seminar A-1 taught by PA. Students in Group SB-1 were graduate students enrolled in seminar B-1 taught by PB.

The undergraduate students in Group S-2 (SA-2 and SB-2 were the same group of students taught by PA and PB)) were selected to participate in the experimental Honors teacher education program on the basis of grades (mean g.p.a. of 3.63/4.00), test scores (mean combined score of 26 on the American College Test), writing and thinking ability, and commitment to teaching. Each professor taught this group of students during sequential semesters (Spring and Fall).

Design

Complete seminar sessions lasting from 2 1/2 to 3 hours were videotaped during regularly scheduled class times. Two sessions of A-1 and two sessions of A-2 were videotaped near the end of Spring Semester and two sessions of B-1 and B-2 were videotaped near the end of Fall Semester. Tapings were made near the end of each semester to ensure that stable interaction patterns had been established.

The longest interactive sequences from videotaped sessions of A-1, A-2, B-1, and B-2 were selected for analysis. Each selection consisted of at least 100 expanded question-answer (IRF) sequences, which were transcribed following a format taken from the work of Sinclair and Coulthard (1973) and Burton (1980). Transcriptions included all verbalizations, nonverbal behaviors that replaced or augmented verbal acts, and paralinguistic features that either replaced or altered the meaning of verbal acts.

Transcript data were subjected to categorization in each discourse analysis system to determine which system better fit the data collected. Because seminar interactions were less formal than those found in traditional classrooms but more formal than those found in casual settings, the systems were combined and modified.

Materials

A new discourse analysis system was designed to examine professor and student participation in seminar talk. The features of the discourse analysis systems (Sinclair & Coulthard, 1973; Burton, 1980) used in developing the system as well as new features

pertinent to the setting are presented in Table 1. The examined systems were structured hierarchically into five Ranks: I. Lesson/Conversation; II. Transaction; III. Exchange; IV. Move; V. Act. As entire seminar sessions were not analyzed, no examples of Rank I lessons were produced. Examples of Ranks II through V as well the new Rank VI modifiers added to refine the system are presented in Appendix A.

In the system designed for seminars, Rank VI modifiers, which provide additional information about an act and indicate whether the function or realization of the act has been altered, were added to allow analysis at the level of secondary as well as primary delicacy. Rank V acts, the smallest primary units outlined in the two previously-developed systems, combine to form Rank IV moves, which include one or more acts. Moves combine to form Rank III exchanges. Moves may combine into a single conversational turn, such as a professor feedback immediately followed by a professor initiation, or into conversational exchanges, which are comprised of moves contributed by different participants. In the present study, Rank III exchanges are viewed as conversational turns; moves are considered components of turns. Exchanges combine to form Rank II transactions, which are comprised of unordered strings of exchanges. As the underlying structure of the transaction is topic, transactions begin with new or restructured topics. The highest unit of classroom discourse is the lesson, comprised of unordered series of transactions.

As shown in Table 1, most discourse categories were open to all seminar members. Contributions at the higher ranks were open to all seminar participants. Of 31 acts, six were open only to the professor and five were open only to students. Of 10 modifiers, nine were open to all participants and one was open only to the professor. Constraints on the types of acts contributed by seminar members indicate role differentiation.

Procedure

When data from the four transcripts were categorized and placed in the seminar system, a second level of analysis was performed. Data were entered into a coded

Table 1: Discourse Analysis System for Seminars

<u>SOURCE</u>	<u>Sinclair & Coulthard</u>	<u>Combined</u>	<u>Burton</u>	<u>New</u>
RANK I	LESSON			
RANK II	Informing Directing Eliciting	TRANSACTION		
RANK III	Teaching	EXCHANGE Boundary		Complex Boundary
RANK IV		MOVE Framing Focusing Opening	Supporting Challenging Bound- Opening Re-Opening	
RANK V	Clue NOMINATION bid	ACT Marker Starter Metastatement Conclusion Prompt Informative Elicitation Directive Comment Accept Reply Acknowledge Evaluate	Accusation Excuse Preface No Response	Beginning Ending ASSESS CHECK/ASSESS CHECK/ELICIT DIRECT/ELICIT ELICIT/DIRECT pl react nv reply hesitation confusion
RANK VI		MODIFIER Silent Stress	Additive Adversative Causal Repeat Restate Qualify	Satire Interruption MISCUE

NOTE: Most categories are open to all participants, but those presented in all capital letters are open only to the professor and those in all lower-case letters only to students.

system that focused on the structure and sequence of moves rather than on raw conversational data. From these coded analyses, categorical acts serving as the heads of moves were tallied and subjected to statistical analysis where appropriate. Detailed descriptions of professors' and students' interactive styles resulted from these analyses.

Results

The introduction and conclusion of topics and turns, which create the structure of seminars, and question-answer sequences, the basic building blocks of conversational maintenance (Edmondson, 1981; Sacks, Schegloff & Jefferson, 1974), were examined in the present study. Professor and student move and turn contributions to the structure and sequence of seminar talk as well as the verbal, nonverbal, and paralinguistic features of seminar talk were analyzed. Results from these analyses led to the development of general participation rules for seminar settings, which were modified when professor and student styles were examined. The performance of professors and students in different contexts also modified the general participation rules.

Professor and Student Contributions to Seminar Talk

The total number of professor and student acts serving as the heads of moves are presented in Appendix B. These acts and moves combine into turns, which then combine to create loosely- or tightly-structured exchanges and transactions. In this study, seminar structure and sequence were analyzed by examining: 1., how many moves, turns, and moves per turn were contributed by professors and students; 2., how the turn-taking system operated; 3., how turns alternated between participants; 4., how professors and students structured boundary and teaching exchanges; and 5., how IRF sequences were realized. In addition, professor and student contributions in different communication channels were examined. Overall results are presented in Table 2.

Table 2: Chi-Square Comparisons of Professor and Student Moves and Turns

COMPARISON	TOTAL N	P	S	χ^2	RESULT
Total Moves	855	468	387	7.67**	P > S
Metacommunicative Moves	200	3 149	6 21	30.42***	P > S
Boundary	104	94	10	67.84***	P > S
Teaching	96	45	51	.37	ns
Select Moves	128	95	33	30.03***	P > S
Initiation Moves	217	139	78	17.14***	P > S
Elicitations	104	78	26	26.00***	P > S
Informatives	53	35	18	5.45*	S > P
Accusations	23	12	11	.04	ns
DIRECT/ELICIT	17	17	0	17.00***	P > S
Response Moves	115	12	103	75.20***	S > P
Replies	93	9	84	60.48***	S > P
Feedback Moves	251	119	132	.67	ns
pl react	56	0	56	56.00***	S > P
Acknowledge	50	37	13	11.52***	P > S
Evaluate	74	43	31	1.94	ns
Comment	54	22	32	1.85	ns
ASSESS	17	17	0	17.00***	P > S
Unconnected Moves	40	9	31	12.10***	S > P
Incomplete	24	6	18	6.00*	S > P
Channel					
Verbal	635	371	261	18.02***	P > S
Nonverbal	144	94	50	13.44***	P > S
Paralinguistic	60	0	60	60.00***	S > P
Total Turns	657	289	368	9.49**	S > P
One-move Turns	516	165	351	67.04***	S > P
Multi-move Turns	141	124	17	81.19***	P > S
Interactive Sequences	368	208	160	6.26*	P-S > S-S

Note: * $p < .05$ with 1 df
 ** $p < .01$ with 1 df
 *** $p < .001$ with 1 df

Total moves, turns, and moves per turn. In classroom settings, teachers have the right to talk most and to structure discussions. In casual settings, participants have equal rights and jointly structure the conversation. Results from analyses of seminars showed that professors contributed more moves than students. Professors took 55% and students took 45% of the total moves in seminars. Although professors contributed more moves than students, the majority of turns were taken by students.

As shown in Table 3, most turns consisted of a single move. The majority of one-move turns were taken by students and the majority of multi-move turns were taken by professors. The average number of moves per turn was 1.64 for professors and 1.06 for students. Whereas approximately 5% of student contributions were multi-move turns, more than 43% of all professor contributions were multi-move turns.

Table 3: Number and Percentage of Professor and Student Moves per Turn in Seminars

<u>Moves per Turn</u>	PA-1	SA-1	PA-2	SA-2	PB-1	SB-1	PB-2	SB-2
One	34	69	26	81	56	98	49	103
Percentage	47.89	95.83	38.81	91.01	70.89	97.03	68.06	97.17
Two	23	2	18	7	18	3	19	3
Percentage	32.39	2.78	26.86	7.87	22.78	2.97	26.39	2.83
Three	11	1	18	1	4		4	
Percentage	15.49	1.39	26.87	1.12	5.06		5.56	
Four	3		5		1			
Percentage	4.23		7.46		1.27			
Total Moves	125	76	136	98	108	104	99	109
Total Turns	71	72	67	89	79	101	72	106
<u>M Moves/Turn</u>	1.76	1.06	2.03	1.10	1.37	1.03	1.38	1.03

Professor and student contributions in seminars combined features expected in both classroom and casual settings. Professors took fewer than the two of every three moves and two moves per turn expected in classroom settings. However, as they took

more total moves and more multi-move turns than students, professors were more active than students in structuring seminar talk.

The turn-taking system. The informal turn-taking system of casual conversation may be described as one speaker's contribution following another's without intervention. The formal turn-taking system of the classroom is composed of select acts which function to determine (i.e., structure) who speaks next. The formal turn-taking system of seminars consisted of the professor's visual scanning of the class in order to assess who was ready to take the next turn, the students' bids for a turn, followed by the professor's nomination of the next speaker. This system may be expressed in the IRF sequence of ASSESS-bid-NOMINATE. As professors took two of three moves in the formal turn-taking system, they contributed significantly more select moves than students.

The select acts found in seminar settings indicated the presence of a formal turn-taking system in which student contributions were explicitly sought and sanctioned by professors. In addition, an informal turn-taking system was observed. By comparing the number of explicitly-sanctioned student contributions with the number of self-selected or implicitly-sanctioned student contributions, a description of the total system emerged. When the total number of student acts serving as the heads of moves (387) was compared with the number of NOMINATE (34) and CHECK/ASSESS acts (7), it was discovered that fewer than 11% of all student contributions were explicitly sanctioned by professors. More than 89% of all student moves were either implicitly-sanctioned (ASSESS after professor Initiation) or a result of student self-selection. Thus, the turn-taking system of seminars was more formal than that found in casual conversations but less formal than typically found in classroom settings.

Interaction patterns. Participants in casual conversations allocate turns among themselves in unpredictable patterns. As described previously, teachers allocate turns among students in classroom settings, resulting in predictable and cyclical teacher-

student-teacher patterns. Seminar turns alternated between the professor and students (P-S) as well as between students (S-S) without professor intervention. Results of the seminar interaction analysis are presented in Table 4.

Table 4: Student-Student Interactions in Four Seminar Settings

* Turns	SA-1	SA-2	SB-1	SB-2	Mean
Two	6	5	14	7	8
Three	1	3	3	3	2.5
Four	1		2	4	1.75
Five		1	1		.5
Seven				1	.25
Nine		1			.25
Twelve		1			.25
TOTALS-S	19	45	50	46	40
+TOTAL P-S	53	44	51	60	52
TOTAL	72	89	101	106	92

The majority of interactive sequences in seminars consisted of P-S sequences. Almost 57% of the turns alternated between the professor and students. This finding emphasized the central role performed by professors. However, interactive sequences in seminars were neither predictable nor totally controlled by the professor. Students in seminars interacted among themselves more frequently than expected for students in classrooms but less frequently than expected for participants in casual settings.

Structuring in boundary and teaching exchanges. Metacommunication, consisting of talk about talk, is typically viewed as both the right and the responsibility of the teacher, who is expected to structure the lesson, tell students what will be discussed,

determine how it will be discussed, and wrap up what has been discussed. Students are not expected to participate in the metacommunicative structure of classrooms (Green & Harker, 1982). In contrast, metacommunication is open to all participants in casual settings, where it is used to open new topics and to re-open previously discussed topics.

As shown in Table 2, professors contributed more to the total metacommunicative structure and to the boundary structure of seminars than did students. No difference was discovered in the number of professor and student contributions to teaching exchanges. These findings showed that student structuring was more likely to occur in Prefaces, pre-heads of moves that re-opened previous topics, and in Evaluations than in the larger boundary exchanges. Whereas student structuring was primarily restricted to contributions in teaching exchanges, professor structuring determined the overall direction of seminar talk. Although students contributed to the structure of seminar talk, their participation was more limited than that of speakers in casual settings.

Initiation, response, and feedback moves. Question-answer sequences are comprised of IRF moves, which serve different purposes in casual and classroom talk. The concept of IRF moves was re-defined for this analysis because seminars combined features from both settings. IRF sequences in seminars contained the expected question-answer-evaluation sequences of classrooms as well as the question-answer-support sequences of casual settings.

Whereas teachers are expected to contribute initiations and feedbacks and students are expected to supply responses in classrooms, these moves are open to all participants in casual settings. In the data collected from seminar settings presented in Appendix B and analyzed in Table 2, professors contributed more initiations and students supplied more responses. When individual acts serving as the heads of initiation moves were compared, differences in professor and student styles were more accurately described. Professors contributed significantly more initiation moves requiring responses than students, who contributed more initiations not requiring responses. The remaining

acts serving as the heads of initiation moves presented in Appendix B were not analyzed as their expected frequencies were less than five per cell.

In classroom settings, teachers are expected to evaluate students. Evaluations are not expected in casual talk, but listeners are expected to support speakers by acknowledging contributions. Though no differences were found in the number of feedback moves contributed by students and professors, some categorical differences were discovered.

Unconnected moves, presented in the last part of Appendix B, are comprised of incomplete, missing, and unrelated moves that do not combine into conversational sequences. They result from interrupting, hesitating to answer questions, not responding to questions or ignoring contributions, and student confusion. In brief, they are acts that do not contribute to the progress of the discussion or interaction. Overall, students contributed significantly more unconnected moves than professors.

Sequencing moves combined features from both classroom and casual talk. All moves were open to all participants, an expectation of casual talk. However, as more initiations were contributed by professors and more responses were contributed by students, these features met expectations for classroom casual talk. Feedback moves were shared among participants, a feature supporting expectations for casual talk. Differences in the types of initiation and feedback moves and in the number of unconnected moves contributed by professors and students indicated the presence of role differentiation among seminar participants.

Verbal, nonverbal, and paralinguistic contributions. Discourse analysis systems, which consider the function rather than the form or content of contributions, focus primarily on verbal exchanges. However, these systems also provide a framework for including nonverbal behavior such as bids and reacts (Sinclair and Coulthard, 1973) or indications of attention such as sustained eye contact in boundary exchanges (Burton,

1980). Paralinguistic features such as intonation patterns and laughter have been mentioned and/or pursued as avenues for further study, as well (Burton, 1981).

In the present study, each move was categorized according to the communication channel of conveyance. Any move containing words was counted as verbal; any move consisting entirely of gestures and movements was categorized as nonverbal; any move containing sounds that did not combine into words was classified as paralinguistic. The number and percentage of acts serving as the heads of moves conveyed through the three communication channels are presented in Table 5.

Comparisons of the types of moves contributed by seminar participants provided information about the channels of communication used by professors and students. As shown in Table 5, almost three-quarters of all moves in seminars contained verbal features. Professors contributed significantly more verbal and nonverbal moves than students. Approximately 17% of all moves in seminars were realized nonverbally. About 7% of all seminar moves were conveyed paralinguistically and almost 2% of all seminar moves were classified as missing or unrelated. Students contributed most paralinguistic and missing or unrelated moves.

These analyses indicate that all communication channels were used in seminar settings. The importance of the nonverbal channel was an unanticipated finding in this study. Professors used nonverbal behavior extensively to structure and sequence conversations by visually monitoring (feedback ASSESS) students' contributions and by silently encouraging (select ASSESS) or distributing (NOMINATE) turns. Students used the nonverbal channel in the formal turn-taking system (bid) and in IRF sequences (nonverbal replies).

Participation rules for seminars. Rules for seminar participation emerged from these analyses. The 13 general participation rules for seminars presented in Table 6 illustrate differences in professor and student roles. Because participation rules for seminars were generalized by combining the contributions of all professors and all

Table 3: Comparisons of Verbal, Nonverbal, Paralinguistic, Missing, and Unrelated Moves

	Traditional			Reflective			Traditional			Reflective		
	A-1	PA-1	SA-1	A-2	PA-2	SA-2	B-1	PB-1	SB-1	B-2	PB-2	SB-2
TOTAL	201	125	76	234	136	98	212	108	104	208	99	109
Percent		62.19	37.81		58.12	41.88		50.94	49.06		47.60	52.40
Verbal	138	98	48	182	110	72	161	89	72	154	82	72
Percent Total	68.66	72.00	63.16	77.78	80.88	73.47	75.94	82.41	69.23	74.04	82.33	66.06
Percent V		65.22	34.78		60.44	39.56		55.23	44.72		53.23	46.73
Nonverbal¹	50	34	16	35	24	11	32	19	13	27	17	18
Percent Total	24.88	27.20	21.05	14.96	17.65	11.22	15.09	17.59	12.50	12.98	17.17	9.17
Percent NV		68.00	32.00		68.57	31.43		59.38	40.63		62.96	37.04
Paraling.²	10		10	15		15	15		15	28		28
Percent Total	4.98		13.16	6.41		15.31	7.08		14.42	9.62		18.35
Percent PL			100.			100.			100.			100.
Missing³	1	1		2	2		3		3			
Percent Total	.50	.80		.85	1.47		1.42		2.38			
Percent M		100.			100.				100.			
Unrelated⁴	2		2				1		1	7		7
Percent Total	1.00		2.63				.47		.96	3.37		6.42
Percent UnR			100.						100.			100.

NOTE: ¹ Nonverbal acts include: nv reps, bid, AS, NV NOM, NV M, NV ACK.

² Student hesitations to elicitation, when found alone, are coded as paralinguistic moves as they consist of the sound "um" in all instances. In the collected data, one paralinguistic student evaluation, "ach", is found. The majority of paralinguistic moves consist of laughter (pl rea) to satirical modifiers.

³ Missing moves include not answering a question and pointedly ignoring a contribution (No Response).

⁴ Unrelated moves do not contribute to the progress of the discussion (confusion).

Table 6: Participation Rules for Seminars

<u>Feature</u>	<u>Rule</u>
Moves	Professors take more moves than students.
Verbal Moves	Professors take more verbal moves than students. About 74% of all moves include verbal features.
Nonverbal Moves	Professors take more nonverbal moves than students. About 17% of all moves are nonverbal.
Paralinguistic Moves	Students take more paralinguistic moves than professors. About 7% of all moves are paralinguistic.
Unconnected Moves	Students contribute more unconnected moves than professors. About 2% of all moves cannot connect in interactive sequences.
Moves per Turn	Professors take more moves per turn than students. Students take more than one move in less than 5% of their turns.
Turns	Students take more turns than professors.
Turn-taking	The turn-taking system varies from informal to formal within seminars. Most student turns (89%) are contributed informally (self-selection or implicit professor sanction). When the formal system operates, professors are responsible for allocating turns.
Metacommunication	Professors are responsible for the metacommunicative structure of seminars. Students may contribute on a limited basis.
Initiation	Professors take the majority of initiation moves and ask more questions than students. Students contribute more informatives. Four initiation moves are open only to professors (CHECK/ASSESS, CHECK/ELICIT, DIRECT/ELICIT, ELICIT/DIRECT).
Response	Students take the majority of response moves and answer more questions than professors. One response move is open only to students (nv reply).
Feedback	Professors and students share feedback moves: evaluations, acknowledges, and comments. One feedback move is open only to professors (ASSESS) and one only to students (pl react).
Interactive Sequences	Professors participate in the majority of interactive sequences. Professor-student interactions account for approximately 58% of seminar interactions. Student-student interactions account for approximately 42%, and many of these consist of laughter (pl react) and comments, both of which are feedback moves.

students, these rules did not consider individual differences related to the performance of a specific professor, group of students, or participation within a particular context. In the following section, the influences of professor and student style are discussed.

Professor and Student Styles in Seminar Talk

Deviations from the set of general participation rules were used to describe individual differences in the interactive styles of both professors and their groups of students. These analyses illustrated the ways in which interactive styles modified the general rules. To determine differences in professor and student styles independent of context, the contributions of professors with their students (PA : SA : PB : SB) were compared. Then the contributions of professors (PA : PB) and students (SA : SB) were compared. The significant differences which resulted are presented in Table 7.

Deviations in participation rules. Five of the 13 general participation rules for seminar settings were substantiated when the contributions of individual professors and their students were compared. Both professors took more moves per turn than their students. Students contributed more paralinguistic and response moves than their professors. The turn-taking system was more informal than formal. Feedback moves were shared between seminar participants.

Eight of the general participation rules were not substantiated. The rules stating that professors take more total, verbal, nonverbal, metacommunicative, and initiation moves than students were based on the performance of PA with SA. Exceptions to these rules were found in seminars taught by PB, who contributed fewer moves than PA and thus had less influence on rule development. SB, who contributed more moves than SA, had more influence on the development of rules. The rules stating that students take more unconnected moves and more turns than professors were based on the performance of SB with PB, not on the performance of SA with PA. The rule stating

Table 7: Differences in Professor and Student Participation Styles

Feature	Professor A	Professor B	Difference	P: S	Students A	Students B	Difference
Moves	261	207	PA > PB	PA > SA	174	213	SB > SA
Verbal Moves	200	171		PA > SA	120	144	
Nonverbal Moves	58	36	PA > PB	PA > SA	27	23	
Paralinguistic Moves				S > P	25	35	
Unconnected Moves	3	6		SB > PB	9	22	SB > SA
Mean/Moves per Turn	1.9	1.38	PA > PB	P > S	1.08	1.03	
Turns	138	151		SB > PB	161	207	SB > SA
Select Sequence Moves	63	32	PA > PB	P > S	21	13	
ASSESS	40	21	PA > PB	P > S			
bid				S > P	21	13	
NOMINATE	23	11	PA > PB	P > S			
Metacommunication	97	42	PA > PB	PA > SA	29	32	
Boundary	68	26	PA > PB	PA > SA	7	3	
Teaching	29	16			22	29	
Initiation	68	71		PA > SA	22	56	SB > SA
Elicitation	50	28	PA > PB	PA > SA	10	16	
Informative	6	12		SB > PB	8	27	SB > SA
Accusation	0	12	PB > PA		4	7	
DIRECT/ELICIT	2	15	PB > PA	PB > SB			
Other	12	4		PA > SA			
Response	1	11	PB > PA	S > P	68	35	SA > SB
Reply	0	9	PB > PA	S > P	59	25	SA > SB
Other	1	2		S > P	9	10	
Feedback	58	61			48	84	SB > SA
Acknowledge	19	18		PA > SA	5	8	
Evaluate	27	16		PA > SA	14	17	
pi react				S > P	21	35	
Comment	9	13			8	24	SB > SA
ASSESS	3	14	PB > PA	P > S			
Interactive Sequences							
P: S Sequences	97	111					
S: S Sequences					64	96	SB > SA

that the majority of interactive sequences were P-S interactions was based on the performance of PA with SA; no significant differences were found in the number of P-S and S-S interactions in seminars taught by PB. Whereas most differentiation between professor and student roles was based on the performance of PA with SA, most rules involving equal participatory rights were based on the contributions of PB and SB. These results indicate that PB developed more equalitarian relationships with students than did PA, and that students in seminars taught by PB had more participation rights than those in seminars taught by PA.

Comparisons of professors. The two professors analyzed in this study varied in style, as evidenced by their structuring and sequencing moves. Although no differences were found in the number of initiation moves contributed by either professor, categorical differences suggested that professors varied not only in their initiatory style but also in the type of responses they expected from students.

PB contributed more responses than PA, who did not respond directly to student questions. PA "finalized" answers by placing them in boundaries or stated why the question would not be answered, thus creating conclusions rather than responses; refused to answer questions by not responding or by turning them back to students as initiations; or restructured questions. PA's contributions following student questions functioned to maintain tight control of seminar structure.

No significant differences were found in the number of feedbacks contributed by professors and only one categorical difference was discovered. PB used the nonverbal ASSESS to tell students that their nonverbal replies to DIRECT/ELICITS were "counted" and would be discussed in the next sequence. In contrast, PA used nonverbals more frequently as structuring than as sequencing moves. PA, who contributed more total, nonverbal, metacommunicative, and select moves and more moves per turn, operated within a more tightly-structured conversational system than PB.

Comparisons of students. Students taught by the two professors also varied in their contributions to seminar talk. Not only did SB contribute more total moves and turns than SA, they also contributed more initiation and feedback moves and interacted more frequently with seminar peers. As expected for students in classrooms, SA contributed more response moves than PA, but they also contributed more responses than SB. These findings show that SB secured more participation rights than SA. PA contributed more moves than SA in both settings; no difference was found in the number of moves contributed by PB and SB. Students' performance with each professor differed both quantitatively and qualitatively based on individual differences in professor style.

These results described how professor and student style influenced and changed general rules for participation in different settings. In the following section, conversations in traditional and reflective contexts are compared. The resulting differences modify both the general participation rules and those described for interactions in settings with different professors.

Professor and Student Participation in Traditional and Reflective Seminar Contexts

To determine the effects of context, professors' and students' contributions in traditional and reflective seminars were examined. First, comparisons were made between the contributions of professors with their students in traditional (P-1 : S-1) and reflective (P-2 : S-2) contexts. Then the contributions of professors (P-1 : P-2) and students (S-1 : S-2) between contexts were compared. Each professor's (PA-1 : PA-2; PB-1 : PB-2) and each student group's (SA-1 : SA-2; SB-1 : SB-2) performance in contexts were examined. Final comparisons included analyses of differences in professors' and students' performance in the reflective (PA-2 : PB-2 ; SA-2 : SB-2) and traditional (PA-1 : PB-1; SA-1 : SB-1) settings. This series of analysis procedures was designed to separate contextual from stylistic effects.

Comparison of overall differences in traditional and reflective seminars. In Table 3 differences between traditional and reflective contexts are presented. As the stylistic effects of individual professor contributions were distributed between contexts, the results discovered in these analyses suppressed the effect of professor style.

Nine of the general participation rules discovered for seminar settings were substantiated when professors' and students' performance in traditional and reflective seminar settings were compared. For instance, when the performance of professors and students in both traditional (P-1 : S-1) and reflective (P-2 : S-2) seminars was compared, professors took more verbal, nonverbal, and metacommunicative moves and more moves per turn than students in both contexts, who contributed more response, paralinguistic, and unconnected moves than professors in both contexts. The turn-taking system in both contexts was more informal than formal, and feedback moves were shared among seminar participants.

Four of the general participation rules were not substantiated for participants in different contexts. Although P-1 contributed more total and initiation moves than S-1, P-2 did not contribute more than S-2. The rule stating that students take more turns than professors was not verified for S-1 as it was for S-2. Also, whereas S-2 interacted with their peers as frequently as with their professors, S-1 interacted more often with their professors. These results indicate that students in reflective seminars were more active in seminar talk, secured more participation rights, and viewed professors as less central to interactive sequences than students in traditional seminars.

No significant differences were found in the contributions of professors between traditional and reflective contexts, except one finding on accusations that was due to professor style rather than to context. This lack of change emphasized the stability of professor style between contexts and the powerful effect of individual teaching styles.

Several contextual differences were discovered between students in traditional and reflective seminars. As no differences were discovered in the total number of moves or

Table 8: Contextual Differences in Professor and Student Participation Styles

Feature	Traditional P-1	Reflective P-2	Difference	P:S	Traditional S-1	Reflective S-2	Difference
Moves	233	235		P-1 > S-1	180	207	
Verbal Moves	179	192		P > S	120	144	
Nonverbal Moves	53	41		P > S	29	21	
Paralinguistic Moves				S > P	25	33	
Unconnected Moves	4	5		S > P	17	14	
Mean/Moves per Turn	1.57	1.71		P > S	1.03	1.07	
Turns	150	139		S-2 > P-2	173	197	
Select Sequence Moves	50	45		P > S	21	12	
ASSESS	29	32		P > S			
bid				S > P	21	12	
NOMINATE	21	13		P > S			
Metacommunication	62	77		P > S	37	24	
Boundary	39	55		P > S	1	9	S-2 > S-1
Teaching	23	22			36	15	S-1 > S-2
Initiation Moves	74	65		P-1 > S-1	25	53	S-2 > S-1
Elicitation	44	34		P-1 > S-1	3	23	S-2 > S-1
Informative	5	13		S-1 > P-1	16	19	
Accusation	12	0	P-1 > P-2*		6	5	
DIRECT/ELICIT	10	7					
Other	5	11			0	6	
Response Moves	4	8		S > P	53	50	
Reply	2	7		S > P	45	39	
Other	2	1		S-2 > P-2	8	11	
Feedback Moves	62	57			63	69	
Acknowledge	20	17		P-1 > S-1	4	9	
Evaluate	23	20			20	11	
pl react				S > P	21	34	
Comment	9	13			17	15	
ASSESS	10	7		P > S			
Interactive Sequences							
P:S Sequences	104	104					
S:S Sequences					69	91	

Note: * As this difference occurred because of one professor's performance in one setting, care should be taken in interpreting results.

turns contributed by students in either setting, these differences were qualitative rather than quantitative. Overall, students in reflective seminars were more active in structuring boundaries and initiating topics than students in traditional seminars.

Comparison of differences between contexts. Significant changes between contexts are presented in Table 9. Few differences in professors' performance were discovered. The finding that PA-2 took more moves per turn than PA-1 indicates that PA made more attempts to structure seminar talk with the undergraduate students in reflective seminars, who themselves made more attempts to structure and sequence seminar talk, than with students in traditional seminars, who made fewer structuring and sequencing attempts. The finding that PB contributed more initiation moves, asked more questions, and made more accusations in the traditional seminar than in the reflective seminar indicates that PB shared the responsibility of initiations when students initiated sequences themselves, an assumption supported by the comparison of SB-1 and SB-2.

Nine differences among students in the two contexts were discovered. Students in both reflective seminars contributed more initiations and asked more questions than students in both traditional seminars, indicating that they were more active in the sequencing of seminar talk than were students in traditional seminars. The finding that SA-2 interacted more frequently with their peers than SA-1 indicated that they were able to influence sequences despite PA's style. Although more variation was found in the performance of students than of professors in the two contexts, the type of student participation encouraged by each professor was consistent with his/her beliefs concerning the transmission of educational knowledge and the participation roles and rights of students in seminar settings.

Comparison of professors' and students' performance in reflective contexts. Changes in the number and type of contributions in reflective seminar settings described the

Table 9: Differences in Professor and Student Participation Styles between Contexts

<u>Feature</u>	<u>Traditional</u> PA-1	<u>Reflective</u> PA-2	<u>Difference</u>	<u>Traditional</u> SA-1	<u>Reflective</u> SA-2	<u>Difference</u>
Verbal Moves				48	72	SA-2 > SA-1
Mean/Moves per Turn	1.76	2.03	PA-2 > PA-1			
Initiation Moves				3	17	SA-2 > SA-1
Elicitation				0	10	SA-2 > SA-1
Feedback Moves						
Acknowledge	14	3	PA-1 > PA-2			
Interactive Sequences				19	43	SA-2 > SA-1
S : S Sequences						
<u>Feature</u>	<u>Traditional</u> PB-1	<u>Reflective</u> PB-2	<u>Difference</u>	<u>Traditional</u> SB-1	<u>Reflective</u> SB-2	<u>Difference</u>
Metacommunication				24	8	SB-1 > SB-2
Boundary				0	3	
Teaching				24	3	SB-1 > SB-2
Initiation Moves	44	27	PB-1 > PB-2	20	36	SB-2 > SB-1
Elicitation	20	8	PB-1 > PB-2	3	13	SB-2 > SB-1
Accusation	12	0	PB-1 > PB-2			
Feedback Moves						
Evaluate				13	4	SB-1 > SB-2

interactive effects of student and professor styles. The differences discovered between professors in reflective settings described their individual styles. As shown in Table 10, the effect of professor style was significant; nine differences between PA and PB in reflective contexts were discovered.

Student performance also modified professors' styles. Although no significant differences were discovered in the number of verbal moves and metacommunicative moves in teaching exchanges when the performance of PA and PB was examined in Table 7, differences were found between PA-2 and PB-2. These findings indicate that the stylistic differences between PA and PB were intensified by the performance of students in reflective settings. That is, PA structured even more in the reflective context to maintain control of student contributions.

The performance of students in the two reflective seminars revealed only five differences between settings, but as they were contributed by the same group of students, these differences may be attributed to the effect of professor style. Whereas these students were more active in initiating moves with PB, they more frequently fulfilled the expected student role of responder with PA. No significant differences were found in the number of initiation, response, or feedback moves contributed by PB-2 and SB-2. However, PA-2 contributed more initiations than SA-2, who in turn contributed more responses than PA-2. These results are consistent with the differing expectations for student performance observed in each professor's style. This group of students secured more participation rights and contributed more to the sequence of seminar talk with PB than with PA.

Comparison of professors' and students' performance in traditional contexts. The differences found between professor and student performance in traditional seminars, presented in Table 11, described the effect of professor style and the influence of students on professor style. As only six differences between professors were found in traditional seminars, contrasted with nine found in reflective seminars, these results

Table 10: Stylistic Differences in Reflective Seminars

Feature	PA-2	PB-2	Differences	SA-2	SB-2	Differences
Moves	136	99	PA-2 > PB-2			
Verbal Moves	110	82	PA-2 > PB-2			
Unconnected Moves				3	11	SB-2 > SA-2
Mean/Moves per Turn	2.03	1.38	PA-2 > PB-2			
Select Sequence Moves	30	15	PA-2 > PB-2			
ASSESS	22	10	PA-2 > PB-2			
Metacommunication	36	21	PA-2 > PB-2			
Boundary Teaching	40	15	PA-2 > PB-2			
	16	6	PA-2 > PB-2			
Initiation Moves				17	36	SB-2 > SA-2
Elicitation Informative	26	8	PA-2 > PB-2	4	15	SB-2 > SA-2
Response Moves				35	15	SA-2 > SB-2
Reply				29	10	SA-2 > SB-2

Table 11: Stylistic Differences in Traditional Seminars

Feature	PA-1	PB-1	Differences	SA-1	SB-1	Differences
Moves				76	104	SB-1 > SA-1
Verbal Moves				48	72	SB-1 > SA-1
Nonverbal Moves	34	19	PA-1 > PB-1			
Mean/Moves per Turn	1.76	1.37	PA-1 > PB-1			
Turns				72	101	SB-1 > SA-1
Metacommunication	41	21	PA-1 > PB-1			
Boundary Teaching	28	11	PA-1 > PB-1	12	24	SB-1 > SA-1
Initiation Moves				5	20	SB-1 > SA-1
Informative Accusation	0	12	PB-1 > PA-1	4	12	SB-1 > SA-1
Response Moves				30	15	SA-1 > SB-1
Reply						
Feedback Moves				18	45	SB-1 > SA-1
Comment				4	13	SB-1 > SA-1
S : S Sequences				19	30	SB-1 > SA-1
Select Sequence Moves						
NOMINATE	15	6	PA-1 > PB-1			

indicate that professors were more alike with different groups of students in traditional settings than they were with the same group of students in reflective settings.

In contrast, ten differences in student performance between traditional seminar settings were discovered; this number is two times greater than that found between students in reflective seminars. As found in the reflective seminar context, SB-1 contributed more initiations than SA-1, although not as many as PB-1. Also, more response moves were contributed by SA-1 than by SB-1. Overall, SB-1 secured more participation rights than SA-1. Once again, interactive sequences indicated that variations in student performance were due to the effect of professor style.

Discussion

The purpose of this study was threefold: to describe professor and student styles in seminar settings, to determine the influence of professors and students on the structure and sequence of seminar talk; and to suggest parameters for reflective teacher education. The following discussion section is separated into three parts which present an overview of seminar interactions, the effects of professor and student styles, and the effects of context.

An Overview of Professor and Student Interactive Styles

Seminar interaction patterns combined features found in classroom and casual settings. As expected in a teaching-learning situation, the professor was the most active participant, had the most rights, and was typically central to the interaction. Professors were responsible for structuring and sequencing seminar talk, monitoring communication channels, and determining topics. Professors contributed the majority of metacommunicative moves, asked the majority of questions, and took more moves per turn than students.

However, students in seminars had more rights than students in other classroom settings. Although students contributed the majority of responses, they also added to

the metacommunicative structure, asked questions, provided feedback in the form of evaluations as well as acknowledgements, and participated in a less formal turn-taking system than is usually found in classroom settings.

The overall comparison of professor and student contributions to the structure and sequence of seminar talk described participant roles, their beliefs concerning the source and transmission of knowledge, and the type of relationship they considered appropriate in seminars. Participant roles often overlapped, but differentiation between professor and student roles occurred as well.

Seminar professors did not use tightly-constructed IRF sequences; they encouraged expanded sequences in which student answers were acknowledged, evaluated, or commented on by students as well as professors. Immediate evaluation of student responses was often withheld. Instead, professors frequently asked students to provide additional information to support their views or "summed up" student contributions in boundaries. Examples of expanded IRF sequences are presented in Appendix A.

Few closed questions, defined as those with "correct" answers, were asked. The questions asked by professors and students functioned to open discussion and to extend topics. Professors were more interested in the information sources used by students, in why students thought as they did and how they thought through issues and arrived at opinions, rather than what they thought. In general, professors guided students through thinking processes instead of evaluating them. Examples of the types of questions asked in seminars are presented in Appendix A.

An overview of seminar interactions is incomplete until the influences of style and context are discussed. The ways in which professors and students interact are determined by individual styles, which are addressed in the following section.

Differences in the Interactive Styles of Professors and Students

Upon examination of the general participation rules for seminars, only three of the 13 participation rules presented in Table 6 remained stable across all settings:

1., Students contribute more paralinguistic moves; 2., Professors take more moves per turn; 3., Most turns are contributed informally. The rule that students contributed more paralinguistic moves than professors resulted from limitations in analysis procedures based on equipment restrictions. Therefore, it is possible that this rule would not withstand examination using more sensitive and sophisticated equipment, such as additional cameras or personal microphones. However, it is probable that future researchers would verify rules related to the greater number of professor than student moves taken per turn and the presence of an informal turn-taking system.

Although differences in professors' and students' styles may be quantitatively described through numerical analyses of their contributions to the structure and sequence of seminar talk, these static descriptions do not provide a multi-dimensional view of seminar interactions. They do not capture the essence of seminar "life".

Qualitative analyses and examples of interactive styles provide a more rounded view of seminar life. The brief sample analyses found in Appendix A not only add life to the features and categories compared in this paper, they also reveal participants' contributions and reactions to humor, interruptions, and intonation patterns. When combined with descriptive analyses of interactive styles, text samples illustrate the steps taken by partners in different conversational "dances".

As the "first among equals" (Adler, 1984, p. 19), professors were responsible for leading the conversational dance. The steps they took reflected their style preferences, which remained relatively stable across settings. This stability allowed a comparison of professor styles through descriptions of the ways in which they "choreographed" seminar talk.

PA led gently by structuring the discussion steps, asking questions, listening to responses, moving with the students, asking more difficult questions requiring students to clarify or to re-examine their responses, retracing steps when they could not proceed, turning students around when they were off-track, encouraging them to

try again, telling them how they were doing, and reviewing the progress made when the topic was concluded. The dance sequenced by PA may be described as an orderly, intellectual waltz following familiar, structured steps and resulting in a new level of problem-solving competence among students, who performed together as a group. PA's nonverbal contributions were used to maintain centrality as monitor of the information and communication systems as well as to ensure that all students were moving together toward an understanding of concepts.

In contrast, PB choreographed by telling students about a personal experience, reviewing the steps taken to resolve the problem, then involving students in the problem-solving process by throwing them into the middle of it and asking them to critically evaluate positions. Once students stated their opinions and ideas, PB abruptly turned the students around by adding another variable and asking them to deal with a redefined situation, pushing students to perform within this new framework on their own, confronting their unexamined arguments, and adding more variables requiring students to incorporate new information into their stated positions. PB jostled with students in a manner that kept them off guard, one in which contributions sometimes seemed disorderly and unstructured. The structural framework was not immediately apparent to all participants. Students who understood the underlying framework knew that only they were able to judge their performance, and then only upon close examination of their belief systems. PB's nonverbal behavior, alternating between confrontive and receptive gestures, frequently focused on individual students rather than the entire group. This behavior emphasized PB's expectation that students operate as individuals rather than as members of a group.

Although seminar content, prior student knowledge, and professor goals regarding students and content were not directly examined in this study, they affected professor style. Students entered PA's seminars with little knowledge related to course content. PA's structuring and sequencing style was used effectively to ascertain that seminar

goals were achieved by all students. Students gained specific knowledge that they were able to apply and evaluate in their schools. Because students entered PB's seminars with a wealth of experience and knowledge related to seminar content, PB asked students to examine their beliefs concerning what they had learned from a variety of sources. Whereas one of PA's goals for students was to build a knowledge base for operation and subsequent evaluation, one of PB's goals was to provide a setting within which students constructed, defended, and evaluated their beliefs as they incorporated new information into their experiential and knowledge bases. The styles used by both professors were effective in meeting their different goals.

Contextual Effects

The majority of exceptions to participation rules in different seminar settings were due to the effect of professor style rather than to the effect of context. Students, who were influenced by professors' structuring and sequencing styles, varied their performance to match professor styles.

Graduate students enrolled in traditional seminars accommodated professors' styles by "playing the game". They followed their professors' lead because they understood and accepted what was expected of them. These "enculturated" graduate students, most of whom were public school teachers, chose their moves carefully to increase their level of participation in seminar talk. Accepting professors as seminar leaders, they made few attempts to structure conversations, ask questions, or initiate sequences. They also adapted to differences in professors' styles. To increase their chances for sustained participation with PA, who operated within a tight structure, they re-opened topics previously established by the professor rather than opening new topics. In contrast, PB's interruptive, accusatory style encouraged students to interrupt and confront. By accurately assessing professor styles, graduate students were able to gauge their performance to match professor expectations.

The undergraduate students in reflective seminars also matched professor styles, but they did not always try to meet professors' expectations. This group of students imitated rather than accommodated teaching styles in order to participate more fully in the structure and sequence of seminar talk. They chose their moves carefully to operate within a framework of intellectual freedom and equality. Compared with students in traditional seminars, students in reflective seminars made more attempts to structure conversations, asked more questions, and initiated more sequences.

Students in reflective seminars frequently imitated the form of professors' structuring and sequencing styles. For example, PA used a particular structuring style to focus attention on topics. Students copied this highly-personalized style to focus attention on topics they wished to discuss. In the traditional seminar, PA contributed the following boundary exchange to begin a discussion:

OKAY /\	frame	MARKER
HERE WE GO HERE WE GO	focus	METASTATEMENT

In the reflective seminar taught by PA, students F-2 and M-17 emphasized and exaggerated PA's style when they contributed the following boundary exchanges to focus attention and to open the topic:

Okay /\	frame	marker
Affective domain /\	focus	metastatement
We're ready for it /\		comment
We're ready for it /\		repetition
Affective domain		repetition
Okay /\	frame	marker
Let's get this e-ffective		
stuff out of the way /\	focus	metastatement/satire

Working within a structured framework, students in PA's reflective seminar wasted few opportunities to participate. They contributed fewer unconnected moves with PA than with PB, who was less structured. These students contributed more initiations and fewer responses with PB than with PA. Students in reflective seminars also imitated professors' sequencing styles by taking over instructional roles. They asked questions and evaluated peers' as well as professors' contributions. The longer student-student

interactive sequences found in reflective seminars resulted from student participation in teaching roles. As a result of matching and using professor styles, students in reflective seminars secured more participation rights and more equal relationships with their professors than students in traditional seminars.

Parameters of Reflective Teacher Education

Although a discrete set of dimensions for reflective teacher education was not clarified in the present study, some parameters for the structure and sequence of reflective seminar interactions were suggested. It was difficult to define reflective teaching because professor style played such an important role. As both professors were chosen to teach students in the experimental inquiry-oriented program because of their reflective teaching styles, the fact that "non-reflective" teaching styles were not analyzed is a limitation in this study. The minimal change found in professors' performance between traditional and reflective settings supported this assumption. Students in all settings were expected to enter into a reflective framework consisting of open-ended questions, problem-solving situations, and experiential examples.

However, because professor style was more powerful than context, an examination of differences in professors' interactive styles suggested parameters for reflective teacher education. For example, although PA was more structured and more central to interactive sequences than PB, each professor asked more open than closed questions. These findings support Joyce and Weil's (1980) assertion that inquiry models include structures ranging from low to high as well as levels of cognitive complexity ranging from low to high. In addition, structural and cognitive complexity levels varied within seminar settings, suggesting that professors adapted their styles to student needs and abilities as well as to the progress of the lesson. Compared with classroom expectations, both professors provided less structure and more opportunity for student participation.

Student performance provided additional information about the parameters of reflective teacher education. Though no differences were found in the total number of

student contributions between contexts, students in reflective seminars performed more active roles in the structure and sequence of seminar talk. Interactions in reflective seminars differed from those in traditional seminars because students took over instructional roles; they contributed more boundaries, verbal moves, topic-introductions, and questions as well as lengthy peer interactions. That they perceived themselves as equal partners with professors was evident in their contributions to seminar talk; no differences were found in the number of initiations or questions contributed by professors and students in reflective seminars. Also, the general rule stating that students take more speaking turns than professors was true for students in reflective seminars but not for students in traditional seminars.

Limitations

This study was designed to examine a limited number of interactions in professor-led discussions for each seminar setting. Small group discussions, presentations, and demonstrations were not examined. Therefore, descriptions of professor style were incomplete; many features, such as the use of varied teaching strategies, were omitted. Despite these limitations, clear descriptions of interactive styles emerged from the collected data. cursory examination of additional discussion segments supported the reported findings, indicating that styles remained stable within and across settings.

As students in the inquiry-oriented program were an intact group enrolled in a series of seminars with different professors, the results of this study may not be generalizable to other populations. Students knew each other well; they had a set of common experiences. It is likely that these experiences affected their performance in seminars. The active roles they constructed, the partnerships they attempted to develop with professors, and their belief in themselves as sources of knowledge as well as learners, may be attributed, at least in part, to their shared history and privileged status in the College of Education.

Appendix A
Sample Analyses
Seminar A-1

Exchange Type	Challenging	Act	Opening	Act	Supporting	Act
Transaction 2 [PRE-LESSON, BACK TO SEATS: HOW MANY GROUPS DISCUSSED SPECIFIC TOPICS]						
Boundary		1.OKAY ^	frame M			
		2.HERE WE GO HERE WE GO	focus MS			
Challenge	3.General talking among class members (36 seconds) (KS 1)conf			4. NV (SCANS CLASS)		AS
Opening		5.HOW MANY OF YOU IN YOUR LITTLE GROUPIES CHOSE TO DO MICRO-COMPUTERS?	DIR/EL	6. NV (hands raised)		NV/rep3
				7. NV (SCANS CLASS)		AS
Bound-Opening		8.HOW MANY OF YOU CHOSE INTERACTIVE VIDEOS?	DIR/EL	9. NV (hands raised)		NV/rep3
				10.NV (SCANS CLASS)		AS
				11.OKAY (SCANS CLASS)		ACK9
Boundary		12.SO WE HAVE ONE TWO GROUPS OF INTERACTIVE VIDEOS AND THE REST OF YOU MICROCOMPUTERS	focus CON			
Transaction 3 [TOPIC: WHAT BELIEFS MUST BE CHANGED WHEN INTRODUCING MICROCOMPUTERS]						
Boundary		1.ALL RIGHT ^	frame M			
		2.SO WE WILL HAVE TO DEAL WITH THESE UH SEPARATELY BUT TOGETHER S				
		3.YOU WILL HAVE TO INTRODUCE YOURSELF AS A MICROCOMPUTER OR AN I V PERSON ^ AS WE ARE DISCUSSING THIS	focus MS			
Opening		4.IN TERMS OF THE INNOVATION ^	S			
		5.WHAT ARE THE BELIEFS OR THE ASSUMPTIONS THAT MIGHT HAVE TO CHANGE ^	EL			
		6.THE UNDERLYING ASSUMPTIONS ^	QUAL3			
		7.THAT MIGHT HAVE TO CHANGE IF WE WERE TO INTRODUCE ^ MICROCOMPUTERS INTO THE CLASS-ROOM? ^	REST3			
		8.OR INTERACTIVE VIDEOS?	COM7			
		9. NV (SCANS CLASS)	AS			
		10.NV bids (assumed)	b			
		11.M-17 ^	NOM			
		12.SPEAK TO ME ^	P			
Challenge	13.Um ^ 14.I.V. ^ (L 6) 15.Um ^ (M-17)	hes ev2/sa hes		16. Laughter		rea14
Re-Opening						
Challenge	16.I'D LIKE TO HOOK HIM UP TO A LITTLE AIR I V (L 6) (UNINTELLIGIBLE)	DV/SA	*17.That the um ^ (M-17)	beg	19. Laughter	rea18
Challenge	20.I MEAN THAT WAS NOT VERY NICE (L 9)	EV14/ SA		21. Laughter		rea20

				22. That's a lovely thought (M-7)	ev18/ sa
				23. Laughter	rea22
				24. BUT YOU'RE DONE QUICK YOU DON'T EVEN KNOW IT	COM18
Re-Opening				*23. Well if the interactive video system is going to replace the teacher like... (M-17)	rep5
Challenge	26. Aachi (PL) (F-7) (L 9)	ev25/ sa		27. Laughter	rea26
Re-Opening				**23. would need to be dispelled with (M-17)	end
				29. OH THAT MYTH WOULD NEED TO BE DISPELLED	ACK28
				30. THAT IT IS GOING...	COM28
				31. That they would be replaced by (M-17)	com/ rest 25
Boundary				32. OKAY /\ frame M	
				33. SO ONE OF THE BELIEFS THAT MUST BE ALTERED IF YOU LOOK AT THE GOALS OF TRAINING /\ focus CON	
				34. WHICH DOES IT A LITTLE MORE COMPLETELY THAN THIS /\ QUAL33	
				35. IS THAT WOULD BE /\ ONE EV23/ OF THE BELIEFS /\ REST33	
Transaction 4 [TOPIC: WHAT MUST YOU REPLACE THESE BELIEFS WITH]					
Boundary				1. WHAT MIGHT YOU HAVE TO REPLACE THAT BELIEF WITH? S	
				2. WHENEVER YOU'RE DEALING WITH INNOVATIONS IF YOU HAVE TO DISPEL A BELIEF IT IS ALWAYS NICE TO PUT A POSITIVE BELIEF IN ITS STEAD IF POSSIBLE /\ focus MS	
Opening				3. HOW MIGHT YOU UH /\ HES	
				4. WHAT KIND OF BELIEF MIGHT YOU PUT IN ITS PLACE? EL	
				5. NV (hands raised) b	
				6. NV (SCANS CLASS) AS	
				7. NV (HEAD NOD TO M-7) NVNOM	
				8. Um /\ hes	
				9. Tell the teacher that not only would it enhance her program /\ rep4	
				10. in a non-threatening way qual9/ sa	
				11. Laughter	rea10
				12. but it would make her look com/ good adv3	
				13. and seem irreplaceable /\ add9	
				14. that she could secure her job as opposed to threaten it by doing so much better with the computer add9	
				15. and people believe that once they get a handle on that computer anyway that they're sort of irreplaceable (M-7) add13	
Challenge	16. WHO'S IRREPLACEABLE? (KS 4) EL			17. The people that have the (NV gesture) (M-7) rep16	
				18. OH THAT HAVE THE /\ ACK17	
Challenge	19. SAY THAT AGAIN (KS 2) EL			20. Um /\ hes	
				21. Once you master the computer or the I V /\ s	
				22. cause we're I V /\ qual21	

	23.Once you master the working of technology	rest21
	24.then you have a /\	hes
	25.there's an air of indis- pensability because people have to be retrained and /\ (M-7)	rep19
Re-Opening	26.the next point which it would be a belief is the com- puter phobia or techno- phobia /\	rep4
	27.so once you have that under your belt you seem more indispensable	rest25
	28.because /\ other people don't have that	qual27
	29.and they're afraid to acquire it (M-7)	add28
Boundary	30.SO YOU'RE SAYING THAT ONE OF THE BELIEFS THEN /\ IS THAT HAVING THESE SKILLS ENHANCES YOUR /\	focus CON
	31.performance and.../\ (M-7)com30	
	32.AND YOUR STICKABILITY	COM/ADD31
	33.Right /\ (M-7)	ev32
	34.OKAY /\	ACC
	35.RATHER THAN DIMINISH- ING IT	COM
	36.OKAY OTHER BELIEFS /\	EL/MCU
	37.GOOD /\	EV9/25/26
	38.BOTH OF YOU /\	QUAL37

Seminar A-2

Exchange Type	Challenging	Act	Opening	Act	Supporting	Act
Transaction 1 [STUDENT ATTEMPTS TO STRUCTURE DISCOURSE; USES SAME STRUCTURING FORMAT AS PROFESSOR USES]						
Boundary		1.Okay /\		frame	m	
		2.Affective domain		focus	ms	
		3.We're ready for it			com	
		4.We're ready for it			rept3	
		5.Affective domain (F-2)			rept2	
Transaction 2 [ANOTHER STUDENT ATTEMPTS TO STRUCTURE DISCOURSE]						
Boundary		1.Okay /\		frame	m	
		2.Let's get this e-ffective stuff out of the way (M-17)		focus	ms/sa	
						3.GET THIS E-EFFECTIVE STUFF OUT OF THE WAY /SA
						4. (Unintelligible student remarks)
						coms
Transaction 3 [PROFESSOR PROVIDES STRUCTURE, VALIDATING TOPIC OF DISCOURSE; AFTER CHALLENGE SEQUENCE, STUDENT ATTEMPTS TO OPEN TOPIC WITH QUESTION: HOW DO YOU DEFINE AFFECT]						
Boundary		1.AFFECTIVE DOMAIN /\		focus	MS	
		2.YES/\			COM	
		3.TERRIFIC			COM	
					/SA	
Challenge	4.You see if you didn't have these frustrating moments you wouldn't appreciate us as much (F-2)		in/sa			
Challenge	5.I LOVE YOU /\	PR				8. Laughter
	6.THIS IS JUST LIKE MY WHOLE LIFE /\	IN/SA				9.AFTER ANOTHER /\
	7.JUST ONE BIG FRUSTRATION ...	QUAL6				10.WITH MY CATS /\
						11.WITH MY NOSE
						QUAL7
Opening		12.NV (assumed)		b		
		13.NV (SCANS CLASS)		AS		
		14.NV (HEAD NOD TO F-6)		NVNOM		
		15.Do you define a-ffect as an observable emotion or just an emotion and /\ intuitive feelings and thoughts?		ei		
		16.Which definition do you use		rest15		
		17 because in my uh in one of my literature classes we were talking about a-ffect		com15		
		18.and one person said it was observable emotions and		add17		
		19.but /\ what's your position on a-ffect?		rest16		
		20.is it observable emotions or is it simply internal thoughts?		rest15		
		21. Unintelligible continuance by F-6		com		
Challenge	22.NO RESPONSE	N/R				
Boundary		23.OKAY /\		frame	M	
		24. I AM NOT GOING TO ANSWER THAT QUESTION YET /\		focus	CON	
		25.I PROMISE YOU I WILL ANSWER THAT QUESTION /\			COM24	

Transaction 4 (PROFESSOR AGAIN RESTRUCTURES CONVERSATION: TAKING STUDENT QUESTION AND USING IT AS TOPIC: WHAT IS THE AFFECTIVE DOMAIN)

Boundary			1.BUT THAT'S A WONDERFUL QUESTION TO START DISCUSSING /\	focus	MS	
Opening			2.FIRST OF ALL /\		S	
			3.WHAT IS THE AFFECTIVE DOMAIN?		EL	
			4.NV SCANS CLASS		AS	
Challenge	5. just about everything you put in your book (L 10) (M-14)	rep3 /sa				6. Laughter rea5
Re-Opening			7.EVERYTHING THAT'S NOT WHAT?	EL/ REST3	9.Cognitive (group)	rep5
			8.NV SCANS CLASS	AS	10.COGNITIVE	REST/ EV9
Bound-Opening			11.AND /\	EL/ REST3	13.Psychomotor (group)	rep11
			12.NV (SCANS CLASS)	AS	14.PSYCHOMOTOR	REST/ EV13
Boundary			15.YES /\	frame	M	

Transaction 6 (PROFESSOR RESTRUCTURES BACK TO ORIGINAL TOPIC: WHAT IS AFFECT)

Boundary			1.OKAY /\	frame	M	
Opening			2.WHAT IS AFFECT?	EL		
			3.I DON'T KNOW	COM1		
			4.INTRINSIC	CL		
			5.ACTUALLY I DO KNOW /\	COM3		
			6. AH /\ (NV SCANS CLASS)	AS		
			7.WHAT DO YOU THINK?	REST2		
Challenge	8.I think that we can only deal with observable things though (F-2) (LOOKS AT F-3) (L 10)	ev2			9.Yeah (F-?)	ack3
Challenge	10.No that's not a behavior (L 6) (F-6)	ev8				
Challenge	11.Criminal things could be contradictory 12.because you could be all cheerful and nice on the outside and you're a loathsome dog on the inside (F-3) (looks at F-2 throughout)	ev/sa8 com/sa			13. Laughter 14.A LOATHESOME DOG /\ 15. I LOVE IT 16. Laughter	rea12 REPT12 COM12 rea15
Re-Opening			17.That's all confused /\ 18.Some people are (?) 19.and then there's the real (unintelligible portion) 20.and some people are with their emotions 21.and they're being real adamant (unintelligible) 22.and they have a tough time hiding them 23.or you know (unintelligible ending) (F-2)	pr hes in com add20 add20 com	24.WEARING IT RIGHT HERE (POINTS TO SLEEVE) 25.Yeah /\ (F-2)	COM ack24
Bound-Opening			26.I mean you can always deal with observable, can't you? (F-2)	el		
Challenge	27.I don't think that's true (L 6) (F-3)	ev26				
Challenge	28. Well how? (KS 3) (F-2)	el				

Challenge	29.That's the point /\	s		
	30.cause you can't /\ (L 6)	ev26		
	*31.You have to... (F-6)	com		
Re-Opening	32.You deal with it in how it affects the um... (M-17)	rep26	34.The learning /\ 35.the product of the learning (M-17)	ack33 com34
	33.learning (F-6)	com		
Bound-Opening	36.in other words in that way it is observable	pr		
	37.You're not going to observe /\ what maybe the attitude or emotion is	rep26		
	38.but you're going to observe how it affects /\	adv37		
	39.and then you're going to have to try and find out what the problem is	add38		
	40.well I mean in ideal situations	qual39		
	41.obviously you're not going to do it all the time	qual39		
	42.but that's where I think you should find out you know /\	adv39		
	43.where it affects what you're trying to get in the kids' minds /\	com		
	44.that's where it's observable	qual43		
	45.and that's where you should try to find out what it is /\ (M-17)	add44		
Boundary	46.so in a way it is not observable except in the product (M-17)	focus con		

Seminar B-1

Exchange Type	Challenging	Act	Opening	Act	Supporting	Act
Transaction 13 [PROFESSOR RESTRUCTURES DISCOURSE TO ENLARGE THEME AND MOVE TO NEXT TOPIC: IS MENTAL ILLNESS CONSTANT IN CULTURES]						
Opening			1.THOSE OF YOU IN COUNSELING 2.RAISE YOUR HANDS	S DIR/EL	3. NV (hands raised) 4. NV (SCANS CLASS)	avrep5 AS
Bound-Opening			5.DO YOU AGREE WITH THAT?	EL	6. Yeah's from several class members	rep5
Bound-Opening			7. NV (SCANS CLASS)	AS	11.I agree with it	rep10
			8.NV bids	b		
			9.GO AHEAD /\	NOM		
			10.DO YOU AGREE WITH THAT?	REPT5		
Challenge	12.SO MENTAL ILLNESS IS A CHAR *13.IS SOMETHING THAT OCCURS WITH THE HIGHER... (L 6)	S AC				
Challenge	14.No /\ (L 10)	ev13				
Challenge	15.I'm just saying /\ 16.You're saying it's more here (L 6) 17.and it's because it's more observable here /\ 18.because we can take the time to do that (L 10)	pr ac add16 qual17				
Challenge	19.YOU WOULD DENY MY STATEMENT THAT IN ANY SOCIETY IF I WAS ABLE RIGHT NOW /\ TOMORROW /\ 20.TO THROW /\ COUNSELORS AND PSYCHOLOGISTS AND PSYCHIATRISTS INTO IRAN /\ *21.AND INCREASE THAT POPULATION BY TWENTY THOUSAND... (L 6)	PR AC ADD20				
Re-Opening			*22.I think it...	pr/ beg		
Challenge	*23.THE MENTAL ILLNESS RATE IN IRAN WOULD ROCKET	END				
Challenge	24.No /\ (L 6)	ev20				
Re-Opening			*25.I think if you would make the whole world the same...	pr/ beg		
Challenge	26.YES (L 6)	EV25				
Re-Opening			*27.It would be proportionate across the whole world	in		
Challenge	28.YOU DON'T BELIEVE THAT MENTAL ILLNESS HAS BEEN CREATED IN THE UNITED STATES TO KEEP PEOPLE WORKING? (L 5)	AC/SA			29.Laughter 30.Yes 31.IN COUNSELING? (L 5) 32.Laughter 33.Yes	res28 rep28 COM/ SA res31 act31

				34. AND THE MORE COUN- SELORS WE PUT OUT THE HIGHER THE RATE OF MENTAL ILLNESS	COM/ SA
Challenge	33.No (L 10)	ev34			
Re-Opening			36.YOU THINK THE HIGHER THE RATE OF MENTAL ILLNESS THE MORE COUN- SELORS WERE PUTTING OUT	AC	
Challenge	37.We don't do ^/ 38.In Portage County we don't have to go looking for the client (L 10)	bes in		39.Business is there yeah 40. Laughter 41.You know if we have five counselors or we have 25 counselors there's still going to be people coming in our door	ack33 rea39 com33
Challenge	42.WHY? (KS 4)	EL/MCU			
Re-Opening			43. NV (hands raised)	b	
			44. NV (SCANS CLASS)	AS	
Transaction 14 (PROFESSOR INTRODUCES NEW TOPIC: THERE WAS LESS MENTAL ILLNESS IN MY PARENTS' GENERATION)					
Boundary			1.MY PARENTS' GENERATION HAD MUCH LESS MENTAL ILLNESS ^/	focus MS	
Opening			2.YOU'RE SAYING THEY JUST DIDN'T HAVE TIME TO THINK ABOUT IT ^/ 3.THEY DIDN'T REALIZE THEY WERE HAVING PROBLEMS ^/ DID THEY 4.NV (SCANS CLASS)	AC COM2 AS	
Challenge	*5. But you...	beg/el			
Challenge	6.SO YOU'RE VIEWING THIS AS A HIGHER LEVEL OF ACHIEVEMENT OF AWARE- NESS (L 6)	AC			
Challenge	7. Right (L 11)	ev6			
Re-Opening			*8.There ^/ For your parents' gen...	pr/ beg	
Challenge	9.SOMEONE HELP ME ^/ (L 5) EL 10.WHERE ARE YOU? P				
Re-Opening			*11.Getting back to your parents' generation 12.more of the Puritan belief ^/ 13.It stays in our house	pr in com	ack12 com
				14.Yeah 15.Yeah let's keep 'em inside let's hide 'em ^/ 16.You know mentally retarded ^/ mentally disabled ^/ 17.Let's keep 'em hide 'em ^/ 18.And nowadays we have programs ^/ 19.You know ^/ um ^/ 20.that people can do things ^/ work ^/ go to...IF-	qual13 rest13 add13 bes qual18
Challenge	21.YOU'RE CREATING THEM ^/ (L 6)	EV			

Seminar B-2

Exchange Type	Challenging	Act	Opening	Act	Supporting	Act
Transaction 11 [PROFESSOR RESTRUCTURES DISCOURSE TOPIC: HOW DO YOU GET AN EVALUATION SYSTEM THAT ISN'T DISTORTED: PICKS UP ON STUDENTS CONTRIBUTIONS]						
Boundary			1.I GUESS THAT'S WHAT I WANT TO KNOW /\	focus	MS	
Opening			2.HOW DO YOU GET AN EVALUATION SYSTEM THAT ISN'T DISTORTED /\			
			3.MAYBE MY RATINGS ARE HIGH BECAUSE I'M SUCH AN EASY GRADER	EL	4.Can you do it by /\ what about student performance (M-11)	rep2
Challenge	5.WHAT (KS 3)	EL		CL/ COM2	6.Student performance (M-11) rept4	
					7.THAT'S A POSSIBILITY /\	ACK6
Bound-Opening			*9.LET'S SEE /\ I...		BEG	
Challenge	9.That's what /\	hes				
	10.I was talking to F-13 /\					
	how /\ if she's in special ed /\	pr				
	11.how are you going to do performance evaluations (M-11)	el				
Challenge	12.Why don't we grade ourselves (F-2)	el			13.You can't /\ I mean you can (M-11)	rep12
					14.BECAUSE IF YOU HAVE A NEGATIVE SELF-CONCEPT YOU'LL BECOME A SELF-FULFILLING PROPHECY	REP12
					15.Unintelligible remark (M-11)	com14
Challenge	16.Students are talking	conf				
Re-Opening			17.WASN'T THAT GOOD	EL		
			18.NV SCANS CLASS	AS		
Challenge	19.Simultaneous talking	conf				
Re-Opening			20.WASN'T THAT GOOD	EL/ REPT 17	21.That was really good (M-8) ev14	
Challenge	23.HOW COME EVERYBODY LISTENED /\ (L 3)	EV/SA			22.YEAH	ACK21
	24.IT WAS ONE OF MY MOST BRILLIANT MOMENTS	COM/ SA			25. Laughter	rea23/ 24
Challenge	26.Simultaneous talking	conf				
Re-Opening			27.NV SCANS CLASS	AS	30.Um /\	hes
			28. NV bid (assumed)	b	31.One thing that should be a combination between the students /\	rep2
			29.GO AHEAD (TO M-8)	NOM	32.um /\ their perceptions of the course /\	qua131
					33.because if they don't like it /\	com32
					34.they're not going to /\	hes
					35.they're going to try to forget it /\	com32

36.or it's just going to forget
by /\ hes
37.be forgotten by itself /\ 'add33
38.and how well they do /\ add31
39.you know /\ and the stand-
ards should be /\ you know
/\ add35
40.what can I say /\ hes
41.should be the teacher's
expectations for what the
students should be /\ you
know (M-8) qual39
42.OKAY ACK

Transaction 12 [PROFESSOR RESTRUCTURES TO BRING UP TOPIC OF ACCOUNTABILITY USING STUDENT'S CONTRIBUTION]

Boundary	1.BUT LET'S SAY WE DO THAT /\	focus	MS	
Opening	2.LIKE I KNOW THE TOP /\ 3.IN FACT YOU'RE SUPPOSED TO KNOW WHEN YOU LEAVE THIS CLASS THINGS LIKE TENURE /\ DIFFERENTIATED STAFFING AND ALL THAT /\ IN 4.I KNOW ALL THAT /\ COM3 5.YOU PROBABLY KNEW A LITTLE BIT BEFORE YOU CAME IN /\ ADD3 6.BUT PROBABLY DID NOT /\ ADV5 7.SO WE DIDN'T EVEN NEED A PRE-TEST /\ CAU6 8.BUT WE CAN SAY HERE'S WHAT THEY SHOULD HAVE GOTTEN OUT OF THIS COURSE /\ ADV6 9.AT THE END OF THIS CLASS THEY COULD GIVE YOU A TEST /\ ADD3 10.AND BASED ON HOW WELL YOU DID /\ ADD9 11.THEY COULD SAY HERE'S HOW PROFESSOR B DID /\ CAU10 12.HE DID VERY WELL /\ QUAL 11 13.I'M BEING HELD AC- COUNTABLE HERE /\ COM11	S	14.0h yeah (F-6)	ack3
Boundary	15.AN ACCOUNTABILITY MODEL WOULD BE BY YOUR LEARNING /\ focus CON 16.SO I MIGHT BE VERY POPULAR /\ COM 17.I MIGHT BE FUN /\ ADD16 18.BUT /\ IF YOU DIDN'T LEARN ANYTHING /\ THEN I WOULD NOT BE MERITORIOUS /\ ADV 16&17 19.THEY'D SAY WELL HE'S MORE POPULAR THAN HE IS GOOD /\ COM18 20.THE WAY IT IS NOW /\ UNLESS YOU HAVE THAT /\ IT ENDS UP A POPULARITY CONTEST /\ COM19 21.AND IT'S GOING TO BE VERY UNFAIR /\ ADD20 22.RIGHT (SCANS CLASS) CH/AS		23.Uh huh (F-7)	ack22

Transaction 13 [STUDENTS OFFER THEIR OPINIONS ABOUT INFORMATION PRESENTED IN PREVIOUS TRANSACTION]

Opening	1.NV SCANS CLASS	AS
	2.NV bid (assumed)	b

		3.YEAH (TO F-6)	NOM	
		4.Yeah but then they grade (unintelligible portion)	in	
		5.some have better written expression than others do /\	qual4	
		*6.Um... (F-6)	hes	
Challenge	*7.BUT I WOULD HAVE TO...	BEG		
Re-Opening		*8.People have (louder than average to regain the floor) integrated the things more within themselves (F-6)	in	9.YEAH *10.and...(F-6) beg
Challenge	11.OKAY THEN GOOD	EVS		
Re-Opening		*12.and can give a general idea maybe of exactly what they learned /\	com	
		13.whereas other students say I learned this this this this and that /\	adv12	
Challenge	*13.What if you take the uh ... (F-2)	*14.and you know... (F-6)	add12/i	
Re-Opening		*16.and everybody has a totally different concept of what they've learned... (F-6)	com	
Challenge	*17.Like if 100 out of 120 people don't know /\ what differentiated whatever is ...(F-2)	in		18.WHATEVER IS YEAH (LOW TONE: FLAT AFFECT) ACK17 19.Then they show that /\ Professor B hasn't been (unintelligible) /\ 20.and maybe a few excep- tional people caught on /\ 21.(unintelligible continu- ance: looking at F-6 through- out) (F-2)
Boundary		22.Yeah but with that accountability model though you're	s	com
		23.you're going with the assumption that that it's all the teacher's respon- sibility for learning /\ focus	con	
		24.There's no student res- ponsibility for learning I mean /\ (M-17)	qual23	

Appendix B

Frequency of Professor and Student Acts Serving as the Heads of Moves in Four Seminar Settings

ACT AS MOVE	A-1	PA-1	SA-1	A-2	PA-2	SA-2	R-1	PR-1	SR-1	R-2	PR-2	SR-2
BOUNDARY	29	28	1	46	48	6	11	11	8	18	15	3
Marker	13	13		19	16	3	4	4		3	3	
Metastatement	7	7		14	12	2	2	2		7	6	1
Conclusion	9	8	1	13	12	1	5	5		8	6	2
COMPLEX BOUNDARY	[8]	[4]	[4]	[13]	[6]	[7]	[11]	[11]		[8]	[12]	[6]
TEACHING	119	63	36	146	64	82	162	77	85	156	66	98
INITIATION	35	30	5	55	38	17	64	44	20	63	27	36
Elicitation	24	24		36	26	10	23	20	3	21	8	13
Informative	5	1	4	9 [2]	5 [1]	4 [1]	16	4	12	23	8	15
Directive				1	1					2		2
Accusation	1		1	3		3	17	12	5	2		2
Comment										4		4
CHECK/ELICIT	2	2		1	1					2	2	
CHECK/ASSESS	1 [1]	1 [1]		5 [3]	5 [3]					[1]	[1]	
DIRECT/ELICIT	2	2					8	8		7	7	
ELICIT/DIRECT										1	1	
RESPONSE	34	1	33	35	0	35	23	3	20	23	8	15
Reply	30		30	29		29	17	2	15	17	7	10
Excuse	1	1		2		2	1	1		1	1	
no replies	3 [1]		3 [1]	4 [2]		4 [2]	5		5	5		5
FEEDBACK	50	32	18	56	26	30	75	30	45	70	31	39
pl react	7		7	14 [2]		14 [2]	15		15	20 [2]		20 [2]
Acknowledge	14	14		10 [2]	5 [1]	5 [1]	10	6	4	16 [1]	12	4 [1]
Evaluate	20 [4]	13 [2]	7 [2]	21	14	7	23 [1]	10 [1]	13	10 [1]	6 [1]	4
Comment	6 [2]	2 [1]	4 [1]	11	7 [1]	4 [1]	20	7	13	17 [2]	6	11 [2]
ASSESS	3	3					7	7		7	7	
SELECT	46	33	13	37	38	7	25	17	8	28	15	5
ASSESS	(1) 18	18		22	22		11	11		10	10	
bid	(R) 13		13	7		7	8		8	5		5
NOMINATE	(F) 15	15		8	8		6	6		5	5	
UNCON- NECTED	7	1	6	5	2	3	14	3	11	14	3	11
INCOMPLETE	4		4	3		3	10	3	7	7	3	4
Beginning	1		1	1		1	9	2	7	7	3	4
Ending	1		1	1		1	1	1				
hesitation	2		2	1		1						
MISSING	1	1		2	2		3		3			
No Response												
UNRELATED confusion	2		2				1		1	7		7
TOTAL	281	123	76	234	136	98	212	108	184	288	99	189

Note: Numbers enclosed in brackets indicate acts serving as the heads of Complex Boundary moves.

References

- Adler, M.J. (1984). The padeia program: An educational syllabus. New York: Macmillan.
- Barnes, D. (1969). Language in the secondary classroom. In D. Barnes, J. Britton & H. Rosen (Eds.), Language, the learner and the school. Harmondsworth: Penguin.
- Bellack, A., Kliebard, H., Hyman, R., & Smith, F. (1966). The language of the classroom. New York: Teachers College Press.
- Burton, D. (1981). Analysing spoken discourse. In M. Coulthard & M. Montgomery (Eds.), Studies in discourse analysis (pp. 61-81). London: Routledge & Kegan Paul.
- Burton, D. (1980). Dialogue and discourse. London: Routledge & Kegan Paul.
- Coulthard, M. (1977). An introduction to discourse analysis. London: Longman.
- Dore, J. (1974). A pragmatic description of early language development. Journal of Psycholinguistic Research, 3, 343-350.
- Edmondson, W. (1981). Spoken discourse: A model for analysis. New York: Longman.
- Edwards, A. D., & Furlong, V. J. (1978). The language of teaching: Meaning in classroom interaction. London: Heinemann Educational Books.
- Erickson, F. (1982). Classroom discourse as improvisation: Relationships between academic task structure and social participation in lessons. In L. C. Wilkinson (Ed.), Communication in the classroom (pp. 133-181). New York: Academic Press.
- Freire, P. (1968). Pedagogy of the oppressed. New York: Herder & Herder.
- Gage, N. L. (1978). The scientific basis of the art of teaching. New York: Teachers College Press.
- Gall, M. D. (1987). Discussion methods. In M. J. Dunkin (Ed.), The international encyclopedia of teaching and teacher education (pp. 232-237). New York: Pergamon Press.
- Green, J. L., & Wallat, C. (1981). Mapping instructional conversations: A sociolinguistic ethnography. In J. L. Green and C. Wallat (Eds.), Ethnology and language in educational settings (pp. 161-207). Norwood, N.J.: Ablex Publishing.
- Green, J. L., & Harker, J. O. (1982). Gaining access to learning: Conversational, social, and cognitive demands of the group. In L. C. Wilkinson (Ed.), Communication in the classroom. New York: Academic Press.
- Heritage, J. C. (1985). Recent developments in conversational analysis. Sociolinguistics, 15, 1-19.

- Joyce, B. & Weil, M. (1980). Models of teaching. (2nd ed). Englewood Cliffs, N. J.: Prentice-Hall.
- Litton-Hawes, E. M. (1977). A foundation for the study of everyday talk. Communication Quarterly, 25 (3), 2-11.
- McLaughlin, M. L. (1984). Glossary. In M. L. Knapp (Series Ed.), Sage series in interpersonal communication: Vol. 3. Conversation: How talk is organized. (pp. 269-278). Beverly Hills, CA: Sage Publications.
- Mehan, H. (1985). The structure of classroom discourse. In T.A. Van Dijk (Ed.), Handbook of discourse analysis: Vol. 3. Discourse and dialogue. (pp. 119-131). Orlando, FL: Academic Press.
- Mehan, H. (1982). The structure of classroom events and their consequences for student performance. In P. Gilmore and A. Glatthorn (Eds.), Language and ethnography series: Vol 2. Children in and out of school: Ethnography and education. Washington, D. C.: Center for Applied Linguistics.
- Power, C. N., (1987). Teaching cycles and strategies. In M. J. Dunkin (Ed.), The international encyclopedia of teaching and teacher education (pp 427- 431) New York: Pergamon Press.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplistic systematics for the organization of turn-taking for conversation. Language, 50, 696-735. -
- Sigman, S. J. (1983). Some multiple restraints placed on conversational topics. In R. T. Craig and K. Tracy (Eds.), Sage series in interpersonal communication: Vol. 2. Conversational coherence: Form, structure and strategy (pp. 174-195). Beverly Hills, CA: Sage Publications.
- Sinclair, J., & Coulthard, R.M. (1975). Towards an analysis of discourse: The English used by teachers and pupils. London: Oxford University Press.
- Stubbs, M. (1983). Discourse analysis. Chicago: University of Chicago Press.
- Stubbs, M. (1976). Language, schools, and classrooms. London: Methuen.
- Tom, A.R. (1985). Inquiring into inquiry-oriented teacher education. Journal of Teacher Education, 36, 33-44.
- Wardhaugh, R. (1985). How conversation works. New York: Basil Blackwell.
- Weiner, S. L. & Goodenough, D. R. (1977). A move toward a psychology of conversation. In R. O. Freedle (Ed.), Discourse processes: Advances in research and theory Vol 1 Discourse production and comprehension (pp. 213-235). Norwood, N. J.: Ablex.
- Young, R. E., Arnold, R., & Watson, K. (1987). Linguistic models. In M. J. Dunkin (Ed.), The international encyclopedia of teaching and teacher education (pp 49-58) New York: Pergamon Press.